

What is claimed is:

- 1           1.     A system for providing Web browser-based remote network  
2     appliance configuration in a distributed computing environment, comprising:  
3           one or more network appliances interconnected within a bounded network  
4     domain defined by a common network address space; and  
5           a configuration client comprising an applet executing within a Web  
6     browser and configuring the network appliances, comprising:  
7           a status module broadcasting a query message to the network  
8     appliances and processing a response message containing network settings,  
9     including a physical network address, received by the applet from at least one  
10    such network appliance responsive to the query message; and  
11           a configuration module generating and sending a configuration  
12    packet using the physical network address for each at least one such network  
13    appliance sending a response message and requiring configuration.
- 1           2.     A system according to Claim 1, further comprising:  
2           a list of the network appliances maintained by the status module for each  
3     at least one such network appliance sending a response message and not requiring  
4     configuration.
- 1           3.     A system according to Claim 1, further comprising:  
2           a completion module receiving a status message from each at least one  
3     such network appliance requiring configuration responsive to receipt of the  
4     configuration packet.
- 1           4.     A system according to Claim 3, wherein the status message  
2     indicates a successful configuration, further comprising sending a kickstart  
3     message to each at least one such network appliance to initiate an autonomous  
4     management session.

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1           5.     A system according to Claim 3, wherein the status message  
2 indicates an unsuccessful configuration, further comprising resending the  
3 configuration packet to the at least one such network appliance.

1           6.     A system according to Claim 3, wherein the status message  
2 indicates an on-going configuration, further comprising waiting for completion of  
3 configuration by the at least one such network appliance.

1           7.     A system according to Claim 1, further comprising:  
2           an applet database storing a plurality of applets customized for execution  
3 within each such bounded network domain; and  
4           an applet request module receiving the applet from the applet database and  
5 installing the applet into the Web browser prior to broadcasting the query  
6 message.

1           8.     A system according to Claim 7, wherein the applet is received in a  
2 secure session.

1           9.     A system according to Claim 1, further comprising:  
2           a message queue storing instructions for the applet, comprising sending at  
3 least one of the query message and the configuration packet.

1           10.    A system according to Claim 1, further comprising:  
2           a packet generator storing into the configuration packet values comprising  
3 at least one of hostname, domain, internet protocol address, netmask, gateway,  
4 primary domain name server, and secondary domain name server.

1           11.    A system according to Claim 1, wherein the bounded network  
2 domain is compliant with the TCP/IP and the configuration packet is compliant  
3 with the UDP.

1           12.    A method for providing Web browser-based remote network  
2 appliance configuration in a distributed computing environment, comprising:

3 broadcasting a query message from an applet executing within a Web  
4 browser to one or more network appliances interconnected within a bounded  
5 network domain defined by a common network address space;  
6 processing a response message containing network settings, including a  
7 physical network address, received by the applet from at least one such network  
8 appliance responsive to the query message; and  
9 generating and sending a configuration packet using the physical network  
10 address for each at least one such network appliance sending a response message  
11 and requiring configuration.

1 13. A method according to Claim 12, further comprising:  
2 updating a list of the network appliances for each at least one such  
3 network appliance sending a response message and not requiring configuration.

1 14. A method according to Claim 12, further comprising:  
2 receiving a status message from each at least one such network appliance  
3 requiring configuration responsive to receipt of the configuration packet.

1 15. A method according to Claim 14, wherein the status message  
2 indicates a successful configuration, further comprising:  
3 sending a kickstart message to each at least one such network appliance to  
4 initiate an autonomous management session.

1 16. A method according to Claim 14, wherein the status message  
2 indicates an unsuccessful configuration, further comprising:  
3 resending the configuration packet to the at least one such network  
4 appliance.

1 17. A method according to Claim 14, wherein the status message  
2 indicates an on-going configuration, further comprising:  
3 waiting for completion of configuration by the at least one such network  
4 appliance.

1 18. A method according to Claim 12, further comprising:

2 receiving the applet from an applet database storing a plurality of applets  
3 customized for execution within each such bounded network domain; and  
4 installing the applet into the Web browser prior to broadcasting the query  
5 message.

1 19. A method according to Claim 18, further comprising:  
2 receiving the applet in a secure session.

1 20. A method according to Claim 12, further comprising:  
2 sending at least one of the query message and the configuration packet  
3 from the applet responsive to instructions maintained in a message queue.

1 21. A method according to Claim 12, further comprising:  
2 storing into the configuration packet values comprising at least one of  
3 hostname, domain, internet protocol address, netmask, gateway, primary domain  
4 name server, and secondary domain name server.

1 22. A method according to Claim 12, wherein the bounded network  
2 domain is compliant with the TCP/IP and the configuration packet is compliant  
3 with the UDP.

1 23. A computer-readable storage medium holding code for performing  
2 the method according to Claims 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, or 22.

1 24. A system for remotely configuring a network appliance deployed  
2 within a distributed computing environment, comprising:  
3 at least one network appliance sending a response message containing  
4 network settings responsive to a query message broadcast over a specified  
5 network domain within which the at least one network appliance operates;  
6 a configuration client generating a configuration package for the at least  
7 one network appliance and containing centrally managed network settings  
8 customized for the at least one network appliance; and  
9 a bootstrap module on the at least one network appliance installing the  
10 configuration package as part of an initialization bootstrap operation.

1           25.    A system according to Claim 24, further comprising:  
2           a centrally managed library of configurations containing network settings  
3   for each such network appliance operating with the specified network domain.

1           26.    A system according to Claim 24, further comprising:  
2           a library of applets for one or more Web browser-based configuration  
3   clients operating within the specified network domain.

1           27.    A system according to Claim 26, further comprising:  
2           an applet server deploying one such applet from the library to each such  
3   configuration client using a secure session.

1           28.    A system according to Claim 24, further comprising:  
2           a standardized user interface exported by the configuration client and  
3   providing configuration controls for a heterogeneous set of the network  
4   appliances.

1           29.    A system according to Claim 24, further comprising:  
2           a package generator including at least one of a timestamp and a unique  
3   seed value in each such configuration package.

1           30.    A system according to Claim 24, further comprising:  
2           a completion module sending a message comprising one of success,  
3   failure and unconfigured following configuration package installation at each  
4   such network appliance.

1           31.    A system according to Claim 24, further comprising:  
2           a status daemon initializing a secure management session following  
3   successful configuration package installation on at least one such network  
4   appliance.

1           32.    A system according to Claim 24, wherein at least one such network  
2   appliance performs one of electronic mail anti-virus scanning, content filtering,  
3   packet routing, and file, Web and print servicing.

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1           33.    A system according to Claim 24, wherein the distributed  
2 computing environment is TCP/IP-compliant.

1           34.    A method for remotely configuring a network appliance deployed  
2 within a distributed computing environment, comprising:  
3           sending a response message containing network settings from at least one  
4 network appliance responsive to a query message broadcast over a specified  
5 network domain within which the at least one network appliance operates;  
6           generating a configuration package for the at least one network appliance  
7 and containing centrally managed network settings customized for the at least one  
8 network appliance; and  
9           installing the configuration package on the at least one network appliance  
10 as part of an initialization bootstrap operation.

1           35.    A method according to Claim 34, further comprising:  
2           centrally managing a library of configurations containing network settings  
3 for each such network appliance operating with the specified network domain.

1           36.    A method according to Claim 34, further comprising:  
2           maintaining a library of applets for one or more Web browser-based  
3 configuration clients operating within the specified network domain.

1           37.    A method according to Claim 36, further comprising:  
2           deploying one such applet from the library to each such configuration  
3 client using a secure session.

1           38.    A method according to Claim 34, further comprising:  
2           exporting a standardized user interface providing configuration controls  
3 for a heterogeneous set of the network appliances.

1           39.    A method according to Claim 34, further comprising:  
2           including at least one of a timestamp and a unique seed value in each such  
3 configuration package.

1           40.    A method according to Claim 34, further comprising:  
2           sending a message comprising one of success, failure and unconfigured  
3           following configuration package installation at each such network appliance.

1           41.    A method according to Claim 34, further comprising:  
2           initializing a secure management session following successful  
3           configuration package installation on at least one such network appliance.

1           42.    A method according to Claim 34, wherein at least one such  
2           network appliance performs one of electronic mail anti-virus scanning, content  
3           filtering, packet routing, and file, Web and print servicing.

1           43.    A method according to Claim 34, wherein the distributed  
2           computing environment is TCP/IP-compliant.

1           44.    A computer-readable storage medium holding code for performing  
2           the method according to Claims 34, 35, 36, 37, 38, 39, 40, 41, 42, or 43.